

Fung. Am. and Fung. Car. I find that n. 52 of the latter is a perfect condition of this fungus.

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EXPLANATION OF PLATE XXV.—*Hypocrella tuberiformis* (B. and R.) Atkinson. Fig. 1, section of portion of young stroma; *a* inner layer; *b* outer layer; *c* conidiophores. Fig. 2, conidia. Fig. 3, ascus with linear ascospores. Fig. 4, portion of ascospore germinating. Fig. 5, perfect condition, stroma bearing perithecia. Fig. 6, section of stroma. Figures 5 and 6 are magnified about $1\frac{1}{2}$ times, the other figures much more.

Notes on the Flora of Canada.

JAMES M. MACOUN.

During the season of 1890 a considerable number of plants were discovered in various parts of Canada that were either new to the Dominion or were of sufficiently rare occurrence to be worthy of note. Except when otherwise mentioned all the plants in this list were collected by Prof. Macoun and myself in British Columbia. The asterisk (*) after the name of a plant signifies that it had not before been found in Canada.

1. *Thalictrum Fendleri* ENGELM.*—Very abundant in low grounds at Kicking Horse Lake, Rocky Mts.

2. *Ranunculus hispidus* MX. var. *Oreganus* GRAY.*—Low grounds at Sproat, on the Columbia River, 15 miles north of the International Boundary, and on the Kootenay river, about half way between Sproat and Kootenay lake, B. C.

3. *Ranunculus hederaceus* L.*—Marshes near New Harbour, Newfoundland. Collected by Rev. A. C. Waghorne in 1889 and 1890.

4. *Isopyrum biternatum* TORR. & GR.*—Abundant in the vicinity of London, Ontario. Collected by J. Dearness.

5. *Delphinium simplex* DOUGL.—Very abundant on rocky banks, about 2 miles above the junction of the Kootenay and Columbia rivers, B. C.

6. *Papaver nudicaule* L. var. *arcticum*, ELKAN.—One clump of about twenty specimens was found on the mountains at Kicking Horse Lake, Rocky Mts., at an elevation of 8,000 feet.

7. *Cardamine bellidifolia* L.— Three specimens of this minute species were found growing with *Draba alpina* in mud on the western slope of Avalanche Mt., Selkirk Mts., B. C., altitude 7,500 feet. Not collected in Canada since Drummond's time.

8. *Arabis Macounii* WATS.— A new *Arabis* that has been named as above by Dr. Watson, and has lately been described, grows in abundance on gravelly slopes, west of the Columbia River at Revelstoke, B. C.

9. *Draba nivalis* JACQ. var. *elongata* WATS.— A few specimens of this plant were collected on the mountains at Kicking Horse Lake last season, where it had been found in 1885, but not separated from *Draba stellata* Jacq., with which it was growing.

10. *Thysanocarpus pusillus* HOOK.— Gravelly slopes at Sproat, B. C. Not recorded from interior before.

11. *Silene Macounii* WATS.— Dr. Watson has recently separated this species from *S. multicaulis*, and all Rocky Mountain references in Macoun's Cat. of Can. Plants belong to this species. Not rare on the mountains at Rogers' Pass and Kicking Horse Lake.

12. *Arenaria tenella* NUTT.— On dry ground at Kamloops, B. C. Not collected before in interior.

13. *Stellaria longipes* GOLDIE, var. *Edwardsii* T. & G.— Not rare on mountains at Kicking Horse Lake, Rocky Mts. Not recorded before from western Canada.

14. *Sidalcea malvæflora* GRAY.— Common at Revelstoke, B. C. Not recorded before from interior.

15. *Claytonia cordifolia* WATS.*— Abundant in woods (5,000 feet alt.) at "Warm Springs," Kootenay Lake, B. C.

16. *Trifolium involucreatum* WILLD.— Revelstoke, B. C. Not found in interior before.

17. *Trifolium microcephalum* PURSH.— Revelstoke and Sproat, B. C. Not found in interior before.

18. *Fragaria Virginiana* DUCH. var. *Illinoensis* GRAY.— The common form at Deer Park, Lower Arrow Lake and Toad Mt., B. C.

19. *Epilobium clavatum* TREL.— A few specimens were found on mountains at Kicking Horse Lake, at an altitude of 7,000 feet.

20. *Peucedanum bicolor* WATS.*— Hillsides at Sproat, B. C.

21. *Zizia cordata* KOCH.—Rare at Kicking Horse Lake, Rocky Mts. The western limit in Canada.
22. *Ligusticum scopulorum* GRAY.*—Specimens collected at Rogers' Pass, B. C., have been doubtfully referred here by Prof. Coulter.
23. *Angelica Lyallii* WATS.*—In subalpine woods at Sproat, B. C.
24. *Cornus pubescens* NUTT. var. *Californica*, C. & E.*—Common at Sproat and Revelstoke, B. C.
25. *Aplopappus Lyallii* GRAY.*—With *A. Brandegei* on mountains at Kicking Horse Lake, altitude 8,000 feet.
26. *Aster stenomerus* GRAY.*—Amongst rocks on mountains at Sproat, B. C.
27. *Antennaria luzuloides* T. & G.—Deer Park, Lower Arrow Lake. Rare in Canada.
28. *Gnaphalium decurrens* SPRENG. var. *Californicum* GRAY.*—Rare at Revelstoke, B. C.
29. *Hemizonella Durandi* GRAY.*—On hillsides at Sproat, B. C.
30. *Madia glomerata* HOOK.—Revelstoke, B. C. Western limit in Canada.
31. *Madia sativa* MOL. var. *racemosa* GRAY.*—Near Sproat, B. C. Eastern limit in Canada.
32. *Arnica Parryi* GRAY.*—Mountain slopes at Kicking Horse Lake, Rocky Mts.
33. *Arnica latifolia* var. *viscidula* GRAY.*—Wooded slopes at Rogers' Pass, Selkirk Mts., B. C.
34. *Arnica cordifolia* var. *eradiata* GRAY.*—Woods at Deer Park, Lower Arrow Lake, B. C.
35. *Microseris nutans* GRAY.*—Common at Sproat, B. C.
36. *Crepis runcinata* T. & G.—Revelstoke, B. C. Western limit.
37. *Heterocodon rariflorum* NUTT.—Sproat, B. C. Eastern limit.
38. *Micromeria Douglasii* BENTH.—“Hot Springs,” Kootenay Lake, B. C. Northern and Eastern limit in Canada.
39. *Eriogonum niveum* DOUGL.*—Lake Okanagan, B. C. Collected by J. McEvoy.
40. *Asarum caudatum* LINDL.—Revelstoke, B. C. Eastern limit in Canada.
41. *Epipactis Helleborine* CRANTZ.*—Near Lambton Mills, Ont. Collected by W. and O. White.

42. *Epipactis gigantea* DOUGL.—Deer Park, Lower Arrow Lake and "Hot Springs," Kootenay Lake, B. C. Rare in Canada.
43. *Allium Nevii* WATS.—Lytton, B. C. Collected by Jas. McEvoy. Only found before in Canada on Vancouver Island.
44. *Potamogeton crispus* L.*—Ashbridge's Bay, east of Toronto, Ont. Collected by Wm. Scott.
45. *Carex Tolmiei* BOOTT, var. *nigella* BAILEY.*—Mts. at Kicking Horse Lake, Rocky Mts.
46. *Carex marcida* BOOTT, var. *debilis* BAILEY.*—Kicking Horse Lake, Rocky Mts.
47. *Agrostis geminata*, TRIN.*—Rogers' Pass, Selkirk Mts.
48. *Agrostis alpina*.*—Rogers' Pass, Selkirk Mts., B. C.
49. *Alopecurus geniculatus* L. var. *robustus* VASEY, (n. var.) Kicking Horse Lake, Rocky Mts.
50. *Deyeuxia glomerata* VASEY, (n. sp.)—Kicking Horse Lake, Rocky Mts.
51. *Deyeuxia Canadensis* HOOK. var. *occidentalis* VASEY.* Kicking Horse Lake, Rocky Mts.
Ottawa, Canada.

What the station botanists are doing.

BYRON D. HALSTED.

The present season is one of unusual activity among station botanists. At the risk of repetition I record briefly the leading points obtained by the several workers and in the alphabetical order of their names:

ALWOOD, of Virginia, has demonstrated an effective treatment for a leaf blight of the apple and established the fact that weak Bordeaux preparations are as effective for grape rot as stronger ones. He has been successful in the artificial pollination of wheat.

ARTHUR, of Indiana, has shown that the water for killing smut spores in soaking wheat can be heated to a considerably higher temperature than heretofore thought safe, and that this treatment, while effective in destroying the smut spores, much increases the yield of the grain. He has shown that the copper sulphate method is effective with oats but detrimental to